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ABSTRACT

This final report describes a research project to identify tasks actually performed by vocational-technical personnel in Texas. The primary objectives of the study were to differentiate tasks and subtasks from competencies identified in earlier studies and to determine the relative amount of time spent on each identified task in order to develop a competency-based education program for preparation of vocational-technical personnel. Methodology involved having a panel of experts to translate the competencies validated earlier into tasks and subtasks, then using appropriate questionnaire methodology to obtain data from a representative sample of vocational-technical teachers, administrators, and guidance personnel in the State. Complete findings of the study are presented in three separate volumes. This report describes planning and management considerations, the population, instrument development, data collection, and statistical analysis procedures, and also presents the summary and conclusions. Frequency tables present data concerning the number of respondents according to age categories and program area. (Author/NJ)

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FINAL REPORT

Identification of Actual Tasks Performed and Relative Amount of Time Spent on Tasks by Vocational-Technical Personnel

Submitted to

The Division of Occupational Research and Development, Department of Occupational and Technical Education, Texas Education Agency
Contract Number 52350159

VT 103 299

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CE 008 967

ABSTRACT

TITLE OF PROJECT:	Identification of Actual Tasks Performed and Relative Amount of Time Spent on Tasks by Vocational-Technical Personnel
ORGANIZATION:	EPD Consortium D Richardson, Texas
PROJECT DIRECTOR:	Dr. Billy N. Pope
EXPENDITURES REQUIRED FOR PROJECT:	$43,280 ($38,952 federal, $4,328 local)
DURATION OF PROJECT:	July 1, 1974 - June 30, 1975 (12 months)

PROBLEM

The problem was to identify tasks actually performed by vocational-technical personnel and to determine the relative amount of time spent performing each task in order to develop a competency-based education program for preparation of vocational-technical personnel.

OBJECTIVES

The major objectives of the project were: (1) to derive lists of tasks from lists of vocational-technical personnel competencies identified in earlier studies, (2) to determine the relative amount of time spent on each identified task, and (3) to present the results of the analysis in a report designed to provide the basis for development of a competency-based education program.

PROCEDURES

The project staff, assisted by consultants and a panel of experts developed lists of tasks derived from earlier studies of vocational-technical personnel competencies. Questionnaires based on the lists of tasks were developed and administered to 980 vocational-technical teachers, 138 vocational directors, and 183 vocational counselors.

Each respondent identified the tasks performed on his or her job and indicated the relative amount of time spent on each task. The responses to the questionnaires were analyzed, statistical summaries were prepared, and a comprehensive report was developed.

POTENTIAL UTILIZATION OF RESULTS

The comprehensive final report, in three volumes, has been disseminated. The results of the study should be of value to program planners in the development of specialty descriptions, the development of specialty training standards and college courses, and the development of inservice training programs and activities for vocational-technical education personnel.

PREFACE

An investigation of the magnitude described in this document necessitates the sincere interest and cooperation of many individuals and groups. One group which devoted many hours to the project was a panel of experts in the area of vocational-technical administration who wrote tasks and subtasks based on competencies validated in an earlier study by Pope (4). Serving on this panel were: W. D. Perkins, Ysleta Independent School District; J. B. Whiteley, Houston Independent School District; E. V. Huffstutler, North Texas State University; and J. E. Cogswell, Dallas Independent School District.

Another group which devoted many hours to the project was a panel of vocational-technical teacher educators who wrote tasks and subtasks based on teaching competencies validated in an earlier study by Pope (6,7). Serving on this panel were: Drs. Linda Keeling, Texas Woman's University; Don Knotts, Prairie View A & M University; Earl H. Knebel, Texas A & M University; Fairchild Carter, North Texas State University; Doyle Holder, North Texas State University; Max Jobe, East Texas State University; Allena Pace, Sam Houston State University; Camille Bell, Texas Tech University; and John Hayes, East Texas State University.

The panel of counselors who wrote tasks and subtasks based on a previous study by Jackson (4) included: Dr. Harold Murphy, East Texas State University; Thomas A. Bass, Region V Education Service Center; Roy Lower, San Angelo Independent School District; Dr. Bill E. Lovelace, EPD Consortium D; and Dr. Leo Schreiner, Texas Education Agency.

The project director and staff are especially appreciative of the time and effort spent by the vocational directors, counselors, guidance personnel, and vocational teachers for responding to the various questionnaires.

Consultants for the project included Dr. E. V. Huffstutler, Professor of Educational Administration, and Dr. Earl McCallon, Associate Professor of Educational Research, North Texas State University. Special acknowledgements are to Mr. Wayne Milligan and Mrs. Kay Kienast, Research Assistants for the project.

INTRODUCTION

The research reported in this document grew out of a need to identify tasks actually performed by vocational-technical instructional personnel, administrators, and guidance personnel in Texas and to determine the relative amount of time spent performing each task. This information is very important for decision making where efforts toward the development or modification of curricula are undertaken.

The study revolved around two primary objectives. These were (1) to differentiate tasks and subtasks from competencies identified in earlier studies by Pope (4,5); and (2) to determine the relative amount of time spent on each identified task.

To accomplish these objectives, specific procedures were developed to translate the competencies validated by the earlier studies, Pope (5,6,7) and Jackson (4), into tasks and subtasks. This was done by means of a panel of experts. Once this had been done, appropriate questionnaire methodology was employed to obtain data from a representative sample of vocational-technical teachers, administrators, and guidance personnel in the state.

In doing this, vocational-technical teachers were first stratified into seven program areas. Once this had been done, simple random samples with strata were drawn using a table of random samples. Listed below are the seven program areas and the samples that were drawn.

Program Area	Sample Size
Trade and Industrial Education	200
Distributive Education	200
Homemaking	200
Vocational Office Education	200

Program Area	Sample Size
Health	109
Agriculture Education	200
Occupational Orientation	40

A separate report, Identification of Actual Tasks Performed and Relative Amount of Time Spent on Tasks by Vocational-Technical Teachers, presents the information supplied by these vocational-technical instructors.

Once the tasks and subtasks had been identified, appropriate questionnaire methodology was employed to obtain data from all the vocational directors in the state. The complete findings of the study are described in Identification of Actual Tasks Performed and Relative Amount of Time Spent on Tasks by Vocational-Technical Administrators.

The questionnaire developed listing the tasks and subtasks was sent to 150 vocational counselors, 40 occupational orientation teachers, and ten placement coordinators selected by a simple random sample. The complete findings are presented in Identification of Actual Tasks Performed and Relative Amount of Time Spent on Tasks by Vocational-Technical Guidance Personnel.

A careful review of the literature revealed that curricula for teacher education guidance personnel, and administration programs are typically developed on the basis of (1) what teachers and teacher educators perceive that vocational-technical personnel should be able to do or know; (2) the relative importance of these perceptions; and (3) hypothesized roles of vocational-technical personnel with no distinction being made between tasks and subtasks. Any curriculum developed to prepare individuals for an occupation should be

based on an analysis of that occupation. A complete analysis of an occupation should include both an identification of actual tasks performed and knowledge required, and the relative amount of time spent on each task performed. It was with these considerations in mind that this study was undertaken.

PLANNING AND MANAGEMENT CONSIDERATIONS

Work on the research project reported in this document was done during the July 1, 1974, through June 30, 1975, time period. Initial planning resulted in the identification of three major phases for the project. These phases represent natural divisions for a discussion of the planning and management procedures followed in the project.

Development of Tasks and Subtasks

Phase I (July 1, 1974 through October 31, 1974)

During this period of time the competencies for teachers identified in the studies by Pope (6,7) were separated into tasks and subtasks. This was done by a nine-member panel of experts. Included on this panel were: Drs. Linda Keeling, Texas Woman's University; Don Knotts, Prairie View A & M University; Earl H. Knebel, Texas A & M University; Fairchild Carter, North Texas State University; Doyle Holder, North Texas State University; Max Jobe, East Texas State University; Allena Pace, Sam Houston State University; Camille Bell, Texas Tech University; and John Hayes, East Texas State University.

In addition, the competencies for administrators from the study by Pope (5) were separated into tasks and subtasks. This was done by a four-member panel of experts. Included on this panel were: W. D. Perkins, Ysleta Independent School District; J. B. Whiteley, Houston Independent School District; E. V. Huffstutler, North Texas State University; and J. E. Cogswell, Dallas Independent School District.

During this period of time, the competencies identified by Jackson (4) were used to develop specific tasks. This was done by a five-member panel of experts. Included on this panel were: Dr. Harold Murphy, East Texas State University; Thomas A. Bass, Region V Education Service Center; Roy Lower, San Angelo Independent School District; Dr. Bill E. Lovelace, EPD Consortium D; and Dr. Leo Schreiner, Texas Education Agency.

Development and Distribution of Survey Instruments
Phase II (November 1, 1974 through February 28, 1975)

During this phase of the project the three survey instruments were constructed, pilot tested, and finalized. The samples of vocational-technical instructional personnel, guidance personnel, and administrators were drawn and the instruments printed and mailed. Construction procedures for the questionnaires were in accordance with the developmental work reported by Christal (1).

Collating and Analysis of Date
Phase III (March 1, 1975 through April 30, 1975)

During this period of time, survey instruments were secured, coded and prepared for computer analysis. Appropriate statistical programs were written and/or modified to perform the necessary analyses. These computer programs were then tested for accuracy. As a final step, the survey information was processed and the results placed into statistical summary tables.

Response rates from the survey groups were good. Listed below are the sample groups and the rate of return:

Area	Return Rate
Trade and Industrial	78%
Distributive Education	82%
Homemaking	89%
Vocational Office Education	87%
Health	75%
Agriculture Education	71%
Occupational Orientation	87%
Guidance Personnel	91%
Administrators	82%

The results of this group's works are reflected in the questionnaires (See Appendix A in each report) utilized in the survey. As a final validation procedure, each task contained in the questionnaires was required to have been identified as an appropriate task by a significant number of members on the validation panels.

Development of Final Report

Phase IV (May 1, 1975 through June 30, 1975)

The final reports for the project were written during this period. This involved a final interpretation of the survey data and the preparation of 100 copies of the reports for the Division of Occupational Research and Development, Department of Occupational Education and Technology,

Texas Education Agency. In addition to the final reports, interim project reports were developed by the survey team in accordance with the requirements specified by the project director. In addition, an overall project report was developed by the project director.

INSTRUMENT DEVELOPMENT

The survey instrument used a format adapted from job inventory questionnaires utilized by the Department of Defense (1). The instructions were very simple and the method for responding convenient and easy (see Appendix A in each report for a copy of the instrument). The respondents were first asked to check tasks they performed and then to go back and rate (using a seven-point scale) the estimated time spent on the task.

The instrument was comprised of 105 tasks (or subtasks) for vocational-technical teachers, 56 tasks (or subtasks) for administrators, and 80 tasks (or subtasks) for guidance personnel. These tasks had been formulated by panels of experts in the field of vocational-technical instruction, administration, and guidance. The panels worked from lists of validated competencies that had been identified in studies conducted by Pope (5,6,7) and Jackson (4).

The tasks on the survey instrument for teachers were divided into ten sections. These were: Instruction: Planning; Instruction: Execution; Instruction: Evaluation; Program Planning, Development, and Evaluation; Management; Guidance; School-Community Relations; Student Vocational Organization; Professional Role and Development; and Coordination.

The items on the survey instrument for administrators were grouped into six sections. These were: (1) Planning, Organizing, and Administering the Educational Enterprise; (2) Improving Educational Opportunities; (3) Securing and Developing Personnel; (4) Providing Educational Facilities, Equipment, Materials, and Services; (5) Providing and Maintaining Adequate Fiscal Resources; and (6) Developing and Maintaining Effective Communication.

DESCRIPTION OF POPULATION

The population for the vocational-technical teacher study consisted of all vocational-technical instructors in the state of Texas. This group was divided into seven subpopulations. These were: Trade and Industrial Education; Distributive Education; Homemaking; Vocational Office Education; Health; Agriculture Education; and Occupational Orientation. Of the 1,149 teachers in the survey 980 (85 percent) returned the survey instrument. Of those responding, 481 (49 percent) were males; 460 (47 percent) were females; and 39 (4 percent) did not indicate their sex.

Table 1 presents the number of respondents by program area. A good representation from each group was obtained. The 47 persons who responded but did not indicate their program area were included in the total group analysis but, of course, excluded in the individual program analyses.

Table 1

NUMBER OF VOCATIONAL TEACHERS RESPONDING TO TASK SURVEY BY PROGRAM AREA

Program Area	Frequency
Trade and Industrial Education	157
Distributive Education	164
Homemaking	178
Vocational Office Education	175
Health	82
Agriculture Education	142
Occupational Orientation	35

Table 1 (Continued)

NUMBER OF VOCATIONAL TEACHERS RESPONDING TO TASK SURVEY BY PROGRAM AREA

Program Area	Frequency
Other	0
Not Reporting	47

The population for the administrator study consisted of all vocational directors in the state of Texas. This constituted a population of 169. One hundred and thirty-eight (82 percent) of the individuals returned the survey instrument.

Eighty-nine percent (89%) of the respondents were males, 2 percent females, and the remainder did not indicate their sex. Table 1 indicates the ages of respondents. More than 50 percent were between the ages of 40 and 54. Approximately 21 percent were under 40 and about 12 percent were over 55 years old.

Table 2

FREQUENCY AND PERCENT OF VOCATIONAL ADMINISTRATORS RESPONDING TO TASK SURVEY BY AGE CATEGORIES

CATEGORIES (AGE)	FREQUENCY	PERCENT
25-29	5	3.62
30-34	10	7.25
35-39	14	10.14

Table 2 (Continued)

FREQUENCY AND PERCENT OF VOCATIONAL ADMINISTRATORS RESPONDING TO TASK SURVEY BY AGE CATEGORIES

CATEGORIES (AGE)	FREQUENCY	PERCENT
40-44	28	20.29
45-49	24	17.39
50-54	25	18.12
55-59	13	9.42
60-up	5	3.62
Not Reporting	14	10.14

The population for the guidance study consisted of all vocational-technical counselors and guidance personnel in the state of Texas. Two district subpopulations were considered. These were occupational orientation as one group and other counselor/guidance personnel as the second group. A good response rate was obtained from both groups. Overall, from the 200 in the sample, 183 (91 percent) returned the questionnaire.

Several analyses were performed on the survey data to analyze characteristics of the respondents. Table 3 gives their ages by age categories. It can be noted that the average age of the respondents was approximately 45 years. Not reported in the table but also tabulated was the number of males or females. Of the respondents, 114 (62.3 percent)

were males; 61 (33.3 percent) females; and 8 (4.3 percent) did not report their sex category.

Table 3

FREQUENCY AND PERCENT OF VOCATIONAL COUNSELORS AND GUIDANCE PERSONNEL RESPONDING TO TASK SURVEY BY AGE CATEGORIES

CATEGORIES (YEARS)	FREQUENCY	PERCENT
25-29	12	6.56
30-34	16	8.74
35-39	21	11.48
40-44	35	19.13
45-49	30	16.39
50-54	38	20.77
55-59	20	10.93
60-up	0	0.00
Not Reporting	11	6.01

Other descriptive data concerning the population included in the studies can be found in the three separate reports.

DATA COLLECTION PROCEDURE

During the November 1, 1974, through February 28, 1975, time period, questionnaires were mailed to the sample of vocational-technical teachers, administrators, and guidance personnel in the state. This represented a random sample of teachers in each program area, all vocational directors, and a random sample of guidance personnel. A second questionnaire was mailed to those not responding in the first wave. The respondents were asked to indicate each of the tasks they performed and then to rate the amount of time they spend in performing the task. A space was provided for the respondents to add additional tasks and rate these tasks. No tasks were added, indicating tasks included on the instruments apparently covered the tasks typically performed by the teachers, administrators, and guidance personnel.

STATISTICAL ANALYSIS PROCEDURES

The survey instruments were designed to be keypunched directly from the form. Once the data were reduced to card input, statistical computer programs were written to tabulate the participant data reported in the Description of Population section.

A special computer program was also developed to analyze the information on tasks. This program was designed to (1) count the number of respondents performing each task; (2) calculate the percent of respondents performing a task; (3) determine the average percent of time spent by respondents performing the task; (4) calculate the percent of time spent by all respondents on a given task; (5) indicate the cumulative sum of the average percent of time spent by all respondents on the tasks; and (6) rank the tasks by percent of respondents performing each task.

Once the information had been computed, it was placed into tables to facilitate interpretation. These tables with discussion are presented in the three final reports which includes:

Identification of Actual Tasks Performed and Relative Amount of Time Spent on Tasks by Vocational-Technical Administrators

Identification of Actual Tasks Performed and Relative Amount of Time Spent on Tasks by Vocational-Technical Teachers

Identification of Actual Tasks Performed and Relative Amount of Time Spent on Tasks by Vocational-Technical Guidance Personnel.

SUMMARY AND CONCLUSIONS

Three separate reports including (1) vocational-technical teachers, (2) administrators, and (3) guidance personnel were developed by the project.

Vocational-Technical Teachers.

The vocational-technical teacher study reports the results of a survey of 105 tasks identified by a panel of experts as those performed by vocational-technical teachers. The information was obtained from 980 vocational-technical teachers in seven program areas which represented an 85 percent return rate. These areas were: Trade and Industrial Education; Distributive Education; Homemaking; Vocational Office Education; Health; Agriculture Education; and Occupational Orientation. Each task was evaluated in terms of (1) the extent to which it is performed by vocational-technical teachers and (2) the percent of time devoted to the task. Tasks were derived from a set of competencies which had been validated in earlier studies by Pope (6,7). Information was collected by means of a mailed questionnaire.

The data were analyzed in two ways. First, each program area was analyzed separately and secondly, a composite analysis across program areas was performed.

The results indicated that respondents were able to differentiate adequately between tasks performed and not performed and the respondents were able to indicate the relative amount of time spent performing these tasks. This further validates the use of this approach by Christal (1) and Lovelace (3).

Differences, along with a great deal of similarity, were noted among the seven groups. A very logical pattern was exhibited. The greatest difference occurred between the occupational orientation group and the other six categories.

The implications for curriculum development are evident. A great deal of similarity of content for instructional programs would appear to be in order. Yet very meaningful differences appear to exist. Overall, this study should provide valuable base line data from which curriculum decisions can be made. In this manner, more effective curricula can be developed and present curricula modified in order to improve effectiveness in the professional development of vocational-technical teachers.

In conclusion, it is recommended that professional preparation of vocational-technical teachers be revised and where needed be developed using similar occupational analysis procedures based on professional tasks performed by practicing vocational-technical teachers. Furthermore, a study needs to be made to determine the complexity and criticality of each of the 105 tasks studied. Finally, it is recommended that such programs be developed jointly by several universities utilizing the tasks identified by the study. A strong pre- and postassessment model will be essential for any competency-based program and should be an integral part of the validation procedure.

Vocational-Technical Administrators.

A detailed consideration of 56 tasks performed by secondary vocational-technical administrators was made in this study. Each task was evaluated

in terms of (1) the extent to which it is performed by vocational-technical administrators and (2) the percent of time devoted to the task. Tasks were derived from a set of validated competencies resulting from an earlier study by Pope (5). Information was collected from directors in the state using a mailed questionnaire.

The results indicated that respondents were able to differentiate adequately between tasks performed and the relative amount of time spent performing these tasks, further validating the use of the approach reported by Christal (1) and subsequently used in this study. Furthermore, among the first five tasks in terms of rank by percent of respondents performing the task, four of these were from tasks in the Planning, Organizing, and Administering the Educational Enterprise section.

The implications for curriculum development are evident. For example, while the nine top ranked tasks constituted only 16 percent of the tasks performed, approximately 25 percent of the directors' time is spent on these tasks. This kind of information is very important for instructional purposes.

Thus, overall, the results of this study should provide valuable base line data from which curriculum decisions can be made. In this manner, more effective curricula can be developed and present curricula modified in order to improve effectiveness in the professional development of vocational administration.

In conclusion, it is recommended that professional preparation of vocational administrators be revised or developed using similar occupational

analysis procedures based on professional tasks performed by practicing vocational administrators. Furthermore, a study needs to be made to determine the complexity and criticality of each of the 56 tasks found in this study. Finally, it is recommended that such programs be developed jointly by several universities utilizing the tasks identified by the study. A strong pre- and postassessment module will be essential for any competency-based program and would be an integral part of the validation procedure.

Vocational-Technical Guidance Personnel.

The vocational-technical guidance personnel study reports the results of a study of 80 tasks performed by occupational orientation and counselor/guidance personnel in the state of Texas. The results were obtained from 183 persons who constituted a random sample of such personnel in the state. Thirty-five of the respondents were occupational orientation personnel while 148 were counselors or guidance professionals. Overall, 91 percent of the persons in the sample returned the survey instrument.

Each task on the questionnaire was evaluated in terms of (1) the extent to which it is performed by vocational-technical teachers and (2) the percent of time devoted to the task. Tasks were derived from a set of competencies which had been validated in an earlier study by Jackson (4). Information was collected by means of a mailed questionnaire.

The data were analyzed in two ways. First, each of the two major groups (occupational orientation and counselor/guidance personnel) were

analyzed separately and secondly, a composite analysis across the two groups was performed.

The results indicated that respondents were able to differentiate adequately between tasks performed and not performed and that the respondents were able to indicate the relative amount of time spent performing these tasks. This further validates the use of this approach by Christal (1) and Lovelace (3).

Overall, this study should provide valuable base line data from which curriculum decisions can be made. In this manner, more effective curricula can be developed and present curricula modified in order to improve effectiveness in the professional development of vocational-technical counselors and guidance personnel.

In conclusion, it is recommended that the professional preparation of vocational-technical counselors and guidance personnel be revised using similar occupational analysis procedures based on professional tasks performed by practicing vocational-technical counselors and guidance personnel. Furthermore, a study needs to be made to determine the complexity and criticality of each of the 80 tasks studied. Finally, it is recommended that such programs be developed jointly by several universities utilizing the tasks identified by the study. A strong pre- and postassessment model will be essential for any competency-based program and should be an integral part of the validation procedure.

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